QUICK GUIDES UCF 2010-1

Caring for Storm-Damaged Trees

Information provided by the National Arbor Day Foundation and the International Society of Arboriculture

In the Storm's Wake

Figure 1: *Fallen tree due to wind. Photo: CSFS*

"Trees are amazingly resilient and many recover with proper care and time," said John Rosenow, president of The Arbor Day Foundation.

After a major storm, a community is instantly changed. Buildings may be damaged or destroyed, power lines down, and trees broken and torn. In the wake of this loss, neighborhoods and entire cities may experience a sense of devastation they have never known before.

"The experiences of many cities whose trees have suffered severe storm damage show us that the situation may not be as bad as it first appears," says John Rosenow, president of The Arbor Day Foundation, an organization that helps people plant and care for trees. "Trees are amazingly resilient and many recover with proper care and time. Despite the urge to do something immediately, people should try to be patient. As long as there isn't an immediate physical risk from a damaged tree, my advice is simple: if you're unsure about its condition, keep the tree for now." Any damaged tree that is kept needs to be monitored for signs of weakness. You also should not assume that fertilizer will improve the tree's situation. Again, the best advice is to be patient and see how the tree responds.

"Of course, safety is the first major concern," Rosenow says. "Everyone should stay away from downed power lines and beware of broken tree limbs that may be ready to fall. Never use pruning equipment near utility lines." Downed utility lines should be reported to utility companies or 911 operators.

He adds that citizens' patience also allows city officials time to organize and respond properly to the situation. After a major storm, city officials, utility workers and private tree care firms must first focus on dealing with hazards to life and property. After that, a major task is removal of debris from the storm, including damaged branches and sometimes entire trees.

Remember, responsibility for streetside trees varies from city to city. The most complete information about street trees in your community, such as publicly owned trees and the city's responsibilities, can be obtained from your city forester or other appropriate city agencies.

This Quick Guide was produced by the Colorado State Forest Service to promote knowledge transfer.

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Assessing a Storm-Damaged Tree:

- ***Is the tree healthy and vigorous?***
- ***Are major limbs broken?***
- ***Has the main tree stem been lost?***
- ***Is at least 50 percent of the tree crown intact?***
- ***How big are the tree wounds?***
- ***Are there remaining branches that can form a new branch structure?***

Use a Certified/Qualified Arborist or Tree Care Company

Figure 2: *Hawthorn tree (Crataegus spp). Photo: CSFS*

"If a tree is large and the work is off the ground, or if a chainsaw is needed, it's best to contact a qualified arborist," Rosenow adds. "They have the equipment and know how to safely remove broken or downed limbs and to help save and repair trees." If you need professional help, locate a qualified tree care specialist and check their references.

Three main tree industry groups accredit tree businesses and individuals, and can be consulted to find or confirm certification of a tree care provider in your area:

- American Society of Consulting Arborists (ASCA), www.asca-consultants.org
- International Society of Arboriculture (ISA), www.isa-arbor.org
- Tree Care Industry Association (TCIA), www.treecareindustry.org

Do not be pressured by people with chainsaws knocking on your door and offering to remove or "repair" your trees. Unfortunately, storms seem to produce such door-to-door callers, most of whom have no training and little interest in your trees beyond making a quick buck.

Following are some important tips to consider when hiring a tree contractor:

- Make sure they are part of an established business in the community with a listing in the phone book, usually under "Tree Service."
- Ask to see current certificates of insurance showing that they are fully insured for property damage, personal liability and workers compensation.
- If possible, get more than one estimate to ensure that the price is competitive with that offered by others for the same services.
- In the case of tree removals, have a clear understanding about who removes the limbs and debris from the property, and whether the price includes stump removal and clean up.

Can these Trees be Saved?

A storm can leave trees looking like there's no tomorrow. Major limbs may be broken or damaged, foliage can be shredded or stripped, or the bark may be torn or gouged. But what at first glance may look like mortal wounds are not necessarily fatal to a tree. Trees have an amazing ability to recover from storm damage.

Assess the Damage

Before writing off a damaged tree, homeowners should evaluate their trees by asking the following questions:

- **Other than the storm damage, is the tree basically healthy and vigorous?** If the tree is basically healthy, is not creating a hazard, and did not suffer major structural damage, it generally will recover if first aid measures are applied immediately after the storm.
    - **Monitor the tree before using fertilizer.** In some situations, such as severe wind and hail storms, trees may lose all or a significant portion of their leaf area, but still be structurally sound. Do not assume that damaged trees will benefit from fertilizer or other nutrient applications, as in many cases they will not. Allow the tree to recover on its own or make a determination with the consultation of a professional arborist.
- **Are major limbs broken?** If larger limbs are broken, it will be harder for the tree to recover from the damage. When large limbs are broken or hanging, or when high climbing or overhead chainsaw work is needed, it's best to hire or consult with a professional arborist. Arborists have the necessary equipment and knowledge, and generally are listed in the telephone directory under "Tree Service."
    - **Take safety precautions.** Look up and look down. Be on the alert for downed power lines and dangerous hanging branches that look like they're ready to fall. Stay away from any downed utility lines, low-voltage telephone or cable lines and fence wires. Don't stand under broken limbs that are hanging or caught in other branches overhead
- **Has the leader (the main upward-trending branch on most trees) been lost?** In species where a leader is important for upward growth or desirable appearance, deciding whether to keep it may be a judgment call. The tree may live without its leader, but might be a stunted or deformed version of the original.
    - **Don't top your trees!** When trees are topped, all of their branches are cut back to stubs on the mistaken assumption that reducing the length of branches will help avoid breakage in future storms. While storm damage may not always allow for ideal pruning cuts, professional arborists say that topping is one of the worst things you can do to your trees.
    - Topped trees tend to promote growth of weakly attached branches that are more likely to break when a storm occurs. The tree will need all its resources to recover from the stress of storm damage. Topping reduces the amount of foliage the tree depends on for the food and nourishment needed for regrowth. (see Figure 9).
- **Is at least 50 percent of the tree's crown (branches and leaves) still intact?** This is a good rule of thumb when assessing tree survivability. A tree with less than half of its branches remaining may not be able to produce enough foliage to nourish the tree through another growing season.

Figure 3: *Damage after a tornado. Photo: CSFS*

Figure 4: *A company pruning storm-damaged trees. Photo: CSFS*

Figure 5: *Avoid topping your trees. Photo: Joseph O'Brien, USDA Forest Service, www.forestryimages.org*

If a tree has been weakened by disease, there may be little that can be done to prevent major breakage or loss when the stresses of a storm occur. However, there are preventive measures you can take to help strengthen your trees so they are more resistant to storm damage.

Figure 7: *A careful assessment of trees is important before and after a storm. Photo: Andrew Koeser, International Society of Arboriculture, www.forestryimages.org*

- **Resist the urge to overprune.** Don't worry if the tree's appearance isn't perfect. Missing branches may cause your trees to look unbalanced or naked. You'll be surprised at how fast the wounds will close, grow new foliage and return to their natural beauty.

Figure 6: *Decay inside this tree made it hazardous before the storm occured. Photo: Joseph O'Brien, USDA Forest Service, www.forestryimages.org*

- **How big are the wounds where branches have been broken or bark has been damaged?** The larger the wound is in relation to the size of the limb, the less likely it is to heal, leaving the tree vulnerable to disease and pests. A 2- to 3-inch wound on a 12-inch diameter limb will close over with new bark within a couple of years.

  - **Remove any broken branches still attached to the tree.** Removing the jagged remains of smaller-sized broken limbs is one common repair that property owners can make after a storm (see Figure 10). If done properly, it will minimize the risk of decay agents entering the wound. Smaller branches should be pruned at the point where they join larger ones. Large, broken branches should be cut back to the trunk or a main limb by an arborist. For smaller branches, follow the pruning guidelines shown in Figure 11 so that you make clean cuts in the right places, which will help the tree to recover faster.

- **Will remaining branches be able to form a new branch structure?** The remaining limbs will grow more vigorously as the tree tries to replace missing foliage. Look to see if remaining branches can eventually fill out the tree to resemble its original appearance.

- **Is the tree species desirable for its location?** If the tree is in the wrong location (such as a potentially tall tree beneath a power line), or an undesirable species for the property (messy fruit, etc.), it may be best to remove it if it has serious damage.

Make the Decision

The above questions and suggestions will help you make informed decisions about your trees. In general, the answer regarding what to do about a particular tree will fall into one of three categories:

1. It's a Keeper

If damage is relatively minor, prune any broken branches, repair torn bark or rough edges around wounds, and let the tree begin the process of wound repair.

- **An Easy Call:** A mature shade tree usually can survive the loss of one major limb. The broken branch should be pruned back to the trunk. In the following months, large wounds should be closely monitored for signs of decay.

- **Minor Damage:** Although the tree has been damaged, enough strong limbs may remain on a basically healthy tree to make saving it possible.

- **Too Young to Die:** Young trees can sustain significant damage and still recover quickly. If the leader is intact and the structure for future branching remains, remove the broken branches and let the tree close over the wounds and recover by itself.

2. Wait and See

If a valuable tree appears to be a borderline case, resist the temptation to simply cut down the tree and be done with it. In such cases, it may be best to carefully prune broken branches and give the tree some time to recover. A final decision can be made later.

- **Easy Does It:** Resist the temptation to prune too heavily. Remember, the tree will need all the foliage it can produce in order to survive through the next growing season. Remove only the damaged limbs, then wait and see what happens.

- **Hold Off:** A healthy mature tree can recover even when several major limbs are damaged. With large trees, it is best to consult with a professional arborist to assess damage and safely prune and remove branches.

3. Say Goodbye

Some trees simply can't be saved or are not worth saving. If the tree has already been weakened by disease, the trunk is split or more than 50 percent of the crown is gone, the tree has lost its survival edge.

- **Tree Tragedy:** This otherwise healthy young tree has lost too much of its crown, the leafy head that is vital for survival. It probably will not be able to grow enough new branches and leaves to provide the necessary nourishment and will never be able to regain its former beautiful shape.

- **Hopeless Case:** About all that's left of this tree is its trunk. The few remaining branches can't provide enough foliage for the tree to make it through another growing season.

- **Fond Farewell to a Friend:** A rotten inner core in the trunk or structural weakness in branching patterns can cause a split trunk, the tree equivalent of a heart attack. The wounds are too large to mend and the tree has lost its sap lifeline between roots and leaves. This tree is all but dead.

Figure 8: *A tree that has lost the leading stem (the main upward-trending branch). Photo: Justin Meier, International Society of Arboriculture, www.forestryimages.org*

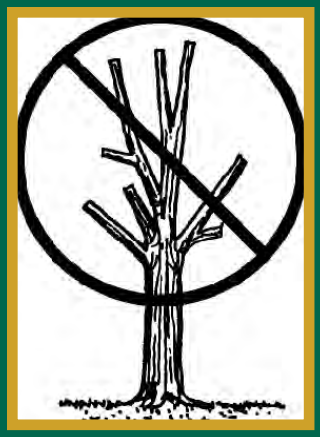

Figure 9: *Do not top your trees. Photo: National Arbor Day Foundation*

Figure 10: *Clean up torm bark. This will heal the tree faster. Photo: National Arbor Day Foundation*

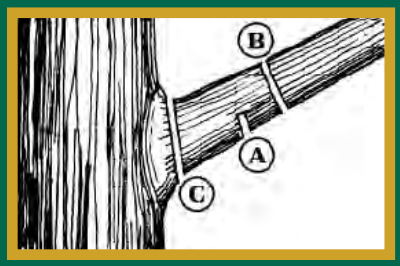

Figure 11: *When you prune, use the three step process to avoid jagged edges— an invitation for insects and diseases. Photo: National Arbor Day Foundation*

Important Tips when Cleaning Up a Tree

- **Never top a tree:** Never cut the main branches of a tree back to stubs. Ugly, weakly attached limbs often will grow higher than the original branches and are more likely to break off in a future storm.
- **Clean up torn bark:** Smoothing the ragged edge of torn bark helps the wound close faster and eliminates hiding places for insects.
- **Three-step process:** The weight of a branch can tear loose during pruning, stripping the bark off the trunk and creating jagged edges that invite insects and disease. That won't happen if you follow these steps:

  1. Make a partial cut from beneath, at a point several inches away from the trunk.
  2. Make a second cut from above, several inches out from the first cut, to allow the limb to fall safely.
  3. Complete the job with a final cut just outside the branch collar, the raised area that surrounds the branch where it joins the trunk.

Reducing Tree Damage in Future Storms

When a major storm strikes, some trees seem to sustain only minor damage, while others suffer the loss of large limbs or sizable parts of their branching structure. In the worst cases, trees may be completely split in two or may have nothing left but a trunk.

If a tree has been weakened by disease, often little can be done to prevent major breakage or loss when the stresses of a storm occur. However, home and property owners can take preventative measures to help strengthen their trees and resist storm damage.

Visit the following websites for instructions and tips on how to proactively prune your trees:

- The Arbor Day Foundation, www.arborday.org
- Trees Are Good, www.treesaregood.com
- Colorado State University Extension, Master Gardeners, http://cmg.colostate.edu/
- University of Florida, Landscape Plants, http://hort.ifas.ufl.edu/woody/

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